

SEQUENCE LISTING

<110> Bernard Pau
 <120> Specific antibodies for diagnosing heart failure
 <130> P70365US0
 <140> US 10/523,400
 <141> 2005-02-03
 <150> PCT/FR03/02483
 <151> 2003-08-07
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 <151> 2002-08-07
 <160> 124
 <170> PatentIn version 3.1
 <210> 1
 <211> 108
 <212> PRT
 <213> Homo sapiens : proBNP(1-108)

<400> 1

His Pro Leu Gly Ser Pro Gly Ser Ala Ser Asp Leu Glu Thr Ser Gly
 1 5 10 15

Leu Gln Glu Gln Arg Asn His Leu Gln Gly Lys Leu Ser Glu Leu Gln
 20 25 30

Val Glu Gln Thr Ser Leu Glu Pro Leu Gln Glu Ser Pro Arg Pro Thr
 35 40 45

Gly Val Trp Lys Ser Arg Glu Val Ala Thr Glu Gly Ile Arg Gly His
 50 55 60

Arg Lys Met Val Leu Tyr Thr Leu Arg Ala Pro Arg Ser Pro Lys Met
 65 70 75 80

Val Gln Gly Ser Gly Cys Phe Gly Arg Lys Met Asp Arg Ile Ser Ser
 85 90 95

Ser Ser Gly Leu Gly Cys Lys Val Leu Arg Arg His
 100 105

<210> 2

<211> 32
<212> PRT
<213> Homo sapiens : proBNP(77-108)

<400> 2

Ser Pro Lys Met Val Gln Gly Ser Gly Cys Phe Gly Arg Lys Met Asp
1 5 10 15

Arg Ile Ser Ser Ser Ser Gly Leu Gly Cys Lys Val Leu Arg Arg His
20 25 30

<210> 3
<211> 76
<212> PRT
<213> Homo sapiens : proBNP(1-76)

<400> 3

His Pro Leu Gly Ser Pro Gly Ser Ala Ser Asp Leu Glu Thr Ser Gly
1 5 10 15

Leu Gln Glu Gln Arg Asn His Leu Gln Gly Lys Leu Ser Glu Leu Gln
20 25 30

Val Glu Gln Thr Ser Leu Glu Pro Leu Gln Glu Ser Pro Arg Pro Thr
35 40 45

Gly Val Trp Lys Ser Arg Glu Val Ala Thr Glu Gly Ile Arg Gly His
50 55 60

Arg Lys Met Val Leu Tyr Thr Leu Arg Ala Pro Arg
65 70 75

<210> 4
<211> 16
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<213> Artificial Sequence

<220>
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<222> (1)..(1)
<223> chemically synthesized

<400> 4

Tyr Thr Leu Arg Ala Pro Arg Ser Pro Lys Met Val Gln Gly Ser Gly
1 5 10 15

<210> 5
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<222> (1)..(1)

<223> chemically synthesized

<400> 5

Arg Ala Pro Arg Ser Pro

1

5

<210> 6

<211> 8

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<222> (1)..(1)

<223> chemically synthesized

<400> 6

Cys Gly Arg Ala Pro Arg Ser Pro

1

5

<210> 7

<211> 8

<212> PRT

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<222> (1)..(1)

<223> chemically synthesized

<400> 7

Cys Gly Arg Ala Pro Arg Ser Pro

1

5

<210> 8

<211> 9

<212> PRT

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<222> (1)..(1)

<223> chemically synthesized

<400> 8

Cys Gly Arg Ala Pro Arg Ser Pro Lys
1 5

<210> 9

<211> 9

<212> PRT

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<222> (1)..(1)

<223> chemically synthesized

<400> 9

Cys Gly Arg Ala Pro Arg Ser Pro Lys
1 5

<210> 10

<211> 11

<212> PRT

<213> Artificial Sequence

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<222> (1)..(1)

<223> chemically synthesized

<400> 10

Cys Gly Arg Ala Pro Arg Ser Pro Lys Met Val
1 5 10

<210> 11

<211> 15

<212> PRT

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<222> (1)..(1)

<223> chemically synthesized

<400> 11

Cys Gly Arg Ala Pro Arg Ser Pro Lys Met Val Gln Gly Ser Gly
1 5 10 15

<210> 12

<211> 8

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<222> (1)..(1)

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<400> 12

Arg Ala Pro Arg Ser Pro Gly Cys
1 5

<210> 13

<211> 8

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<222> (1)..(1)

<223> chemically synthesized

<400> 13

Arg Ala Pro Arg Ser Pro Gly Cys
1 5

<210> 14

<211> 11

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<222> (1)..(1)

<223> chemically synthesized

<400> 14

Cys	Tyr	Thr	Leu	Arg	Ala	Pro	Arg	Ser	Pro	Lys
1				5					10	

<210> 15

<211> 17

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<222> (1)..(1)

<223> chemically synthesized

<400> 15

Cys	His	Arg	Lys	Met	Val	Leu	Tyr	Thr	Leu	Arg	Ala	Pro	Arg	Ser	Pro
1				5					10					15	

Lys

<210> 16

<211> 17

<212> PRT

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<222> (1)..(1)

<223> chemically synthesized

<400> 16

Cys	Tyr	Thr	Leu	Arg	Ala	Pro	Arg	Ser	Pro	Lys	Met	Val	Gln	Gly	Ser
1				5					10					15	

Gly

<210> 17

<211> 17

<212> PRT

<213> Artificial Sequence

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<222> (1)..(1)

<223> chemically synthesized

<400> 17

Cys	Phe	Thr	Leu	Arg	Ala	Pro	Arg	Ser	Pro	Lys	Met	Val	Gln	Gly	Ser
1				5					10					15	

Gly

<210> 18

<211> 17

<212> PRT

<213> Artificial Sequence

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<222> (1)..(1)

<223> chemically synthesized

<400> 18

Cys	Phe	Ser	Ile	Arg	Ala	Pro	Arg	Ser	Pro	Lys	Met	Val	Gln	Gly	Ser
1				5					10					15	

Gly

<210> 19
<211> 17
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<222> (17)..(17)
<223> bAla

<400> 19
Cys Tyr Thr Leu Arg Ala Pro Arg Ser Pro Lys Met Val Gln Gly Ser
1 5 10 15

Ala

<210> 20
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<221> MOD_RES
<222> (17)..(17)
<223> bAla

<400> 20
Cys Tyr Thr Leu Arg Ala Pro Arg Ser Pro Lys Met Val Gln Ala Thr
1 5 10 15

Ala

<210> 21
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
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<222> (17)..(17)
<223> bAla

<400> 21
Cys Phe Ser Ile Arg Ala Pro Arg Ser Pro Lys Met Val Gln Ala Thr
1 5 10 15

Ala

<210> 22
<211> 17
<212> PRT
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<222> (1)..(1)
<223> chemically synthesized

<400> 22
Cys Phe Ser Ile Arg Ala Pro Arg Ser Pro Ala Leu Ala Ser Gly Thr
1 5 10 15

Ala

<210> 23
<211> 15

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<222> (1)..(1)

<223> chemically synthesized

<400> 23

His	Pro	Leu	Gly	Ser	Pro	Gly	Ser	Ala	Ser	Asp	Leu	Glu	Thr	Ser
1				5					10					15

<210> 24

<211> 15

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<222> (1)..(1)

<223> chemically synthesized

<400> 24

Gly	Ser	Pro	Gly	Ser	Ala	Ser	Asp	Leu	Glu	Thr	Ser	Gly	Leu	Gln
1				5					10					15

<210> 25

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<222> (1)..(1)

<223> chemically synthesized

<400> 25

Gly	Ser	Ala	Ser	Asp	Leu	Glu	Thr	Ser	Gly	Leu	Gln	Glu	Gln	Arg
1				5					10					15

<210> 26

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<222> (1)..(1)

<223> chemically synthesized

<400> 26

Ser Asp Leu Glu Thr Ser Gly Leu Gln Glu Gln Arg Asn His Leu
1 5 10 15

<210> 27

<211> 15

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<222> (1)..(1)

<223> chemically synthesized

<400> 27

Glu Thr Ser Gly Leu Gln Glu Gln Arg Asn His Leu Gln Gly Lys
1 5 10 15

<210> 28

<211> 15

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<222> (1)..(1)

<223> chemically synthesized

<400> 28

Gly Leu Gln Glu Gln Arg Asn His Leu Gln Gly Lys Leu Ser Glu
1 5 10 15

<210> 29

<211> 15

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<222> (1)..(1)

<223> chemically synthesized

<400> 29

Glu Gln Arg Asn His Leu Gln Gly Lys Leu Ser Glu Leu Gln Val
1 5 10 15

<210> 30

<211> 15

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<222> (1)..(1)

<223> chemically synthesized

<400> 30

Asn His Leu Gln Gly Lys Leu Ser Glu Leu Gln Val Glu Gln Thr
1 5 10 15

<210> 31

<211> 15

<212> PRT

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<222> (1)..(1)
<223> chemically synthesized

<400> 31

Gln	Gly	Lys	Leu	Ser	Glu	Leu	Gln	Val	Glu	Gln	Thr	Ser	Leu	Glu
1				5					10					15

<210> 32

<211> 15

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<223> chemically synthesized

<400> 32

Leu	Ser	Glu	Leu	Gln	Val	Glu	Gln	Thr	Ser	Leu	Glu	Pro	Leu	Gln
1				5					10					15

<210> 33

<211> 15

<212> PRT

<213> Artificial Sequence

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<222> (1)..(1)
<223> chemically synthesized

<400> 33

Leu	Gln	Val	Glu	Gln	Thr	Ser	Leu	Glu	Pro	Leu	Gln	Glu	Ser	Pro
1				5					10					15

<210> 34

<211> 15

<212> PRT

<213> Artificial Sequence

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<222> (1)..(1)
<223> chemically synthesized

<400> 34

Glu	Gln	Thr	Ser	Leu	Glu	Pro	Leu	Gln	Glu	Ser	Pro	Arg	Pro	Thr
1				5					10					15

<210> 35

<211> 15

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<222> (1)..(1)
<223> chemically synthesized

<400> 35

Ser	Leu	Glu	Pro	Leu	Gln	Glu	Ser	Pro	Arg	Pro	Thr	Gly	Val	Trp
1				5					10					15

<210> 36

<211> 15

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<223> chemically synthesized

<400> 36

Pro	Leu	Gln	Glu	Ser	Pro	Arg	Pro	Thr	Gly	Val	Trp	Lys	Ser	Arg
1				5					10					15

<210> 37

<211> 15

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<222> (1)..(1)

<223> chemically synthesized

<400> 37

Glu	Ser	Pro	Arg	Pro	Thr	Gly	Val	Trp	Lys	Ser	Arg	Glu	Val	Ala
1				5					10					15

<210> 38

<211> 15

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<222> (1)..(1)

<223> chemically synthesized

<400> 38

Arg	Pro	Thr	Gly	Val	Trp	Lys	Ser	Arg	Glu	Val	Ala	Thr	Glu	Gly
1				5					10					15

<210> 39

<211> 15

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<222> (1)..(1)

<223> chemically synthesized

<400> 39

Gly	Val	Trp	Lys	Ser	Arg	Glu	Val	Ala	Thr	Glu	Gly	Ile	Arg	Gly
1				5					10					15

<210> 40

<211> 15

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<222> (1)..(1)

<223> chemically synthesized

<400> 40

Lys	Ser	Arg	Glu	Val	Ala	Thr	Glu	Gly	Ile	Arg	Gly	His	Arg	Lys
1				5					10					15

<210> 41

<211> 15

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<222> (1)..(1)

<223> chemically synthesized

<400> 41

Glu	Val	Ala	Thr	Glu	Gly	Ile	Arg	Gly	His	Arg	Lys	Met	Val	Leu
1				5					10					15

<210> 42

<211> 15

<212> PRT

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<222> (1)..(1)

<223> chemically synthesized

<400> 42

Thr	Glu	Gly	Ile	Arg	Gly	His	Arg	Lys	Met	Val	Leu	Tyr	Thr	Leu
1				5					10					15

<210> 43

<211> 15

<212> PRT

<213> Artificial Sequence

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<222> (1)..(1)

<223> chemically synthesized

<400> 43

Ile	Arg	Gly	His	Arg	Lys	Met	Val	Leu	Tyr	Thr	Leu	Arg	Ala	Pro
1				5					10					15

<210> 44

<211> 15

<212> PRT

<213> Artificial Sequence

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<221> MOD_RES

<222> (1)..(1)

<223> chemically synthesized

<400> 44

His	Arg	Lys	Met	Val	Leu	Tyr	Thr	Leu	Arg	Ala	Pro	Arg	Ser	Pro
1				5					10					15

<210> 45

<211> 15

<212> PRT

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<221> MOD_RES

<222> (1)..(1)

<223> chemically synthesized

<400> 45

Met Val Leu Tyr Thr Leu Arg Ala Pro Arg Ser Pro Lys Met Val
 1 5 10 15

<210> 46

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<221> MOD_RES

<222> (1)..(1)

<223> chemically synthesized

<400> 46

Tyr Thr Leu Arg Ala Pro Arg Ser Pro Lys Met Val Gln Gly Ser
 1 5 10 15

<210> 47

<211> 15

<212> PRT

<213> Artificial Sequence

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<222> (1)..(1)

<223> chemically synthesized

<400> 47

Arg Ala Pro Arg Ser Pro Lys Met Val Gln Gly Ser Gly Cys Phe
 1 5 10 15

<210> 48

<211> 15

<212> PRT

<213> Artificial Sequence

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<222> (1)..(1)

<223> chemically synthesized

<400> 48

Arg Ser Pro Lys Met Val Gln Gly Ser Gly Cys Phe Gly Arg Lys
1 5 10 15

<210> 49

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

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<222> (1)..(1)

<223> chemically synthesized

<400> 49

Lys Met Val Gln Gly Ser Gly Cys Phe Gly Arg Lys Met Asp Arg
1 5 10 15

<210> 50

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

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<222> (1)..(1)

<223> chemically synthesized

<400> 50

Gln Gly Ser Gly Cys Phe Gly Arg Lys Met Asp Arg Ile Ser Ser
1 5 10 15

<210> 51

<211> 15

<212> PRT

<213> Artificial Sequence

<220>
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<222> (1)..(1)
<223> chemically synthesized

<400> 51

Gly Cys Phe Gly Arg Lys Met Asp Arg Ile Ser Ser Ser Ser Gly
1 5 10 15

<210> 52

<211> 15

<212> PRT

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<222> (1)..(1)
<223> chemically synthesized

<400> 52

Gly Arg Lys Met Asp Arg Ile Ser Ser Ser Ser Gly Leu Gly Cys
1 5 10 15

<210> 53

<211> 15

<212> PRT

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<222> (1)..(1)
<223> chemically synthesized

<400> 53

Met Asp Arg Ile Ser Ser Ser Ser Gly Leu Gly Cys Lys Val Leu
1 5 10 15

<210> 54

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

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<222> (1)..(1)

<223> chemically synthesized

<400> 54

Ile	Ser	Ser	Ser	Ser	Gly	Leu	Gly	Cys	Lys	Val	Leu	Arg	Arg	His
1				5					10					15

<210> 55

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

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<222> (1)..(1)

<223> chemically synthesized

<400> 55

Ala	Thr	Leu	Arg	Ala	Pro	Arg	Ser	Pro	Lys	Met	Val	Gln	Gly	Ser
1				5					10					15

<210> 56

<211> 15

<212> PRT

<213> Artificial Sequence

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<222> (1)..(1)

<223> chemically synthesized

<400> 56

Tyr	Ala	Leu	Arg	Ala	Pro	Arg	Ser	Pro	Lys	Met	Val	Gln	Gly	Ser
1				5					10					15

<210> 57

<211> 15

<212> PRT

<213> Artificial Sequence

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<222> (1)..(1)

<223> chemically synthesized

<400> 57

Tyr	Thr	Ala	Arg	Ala	Pro	Arg	Ser	Pro	Lys	Met	Val	Gln	Gly	Ser
1				5					10					15

<210> 58

<211> 15

<212> PRT

<213> Artificial Sequence

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<222> (1)..(1)

<223> chemically synthesized

<400> 58

Tyr	Thr	Leu	Ala	Ala	Pro	Arg	Ser	Pro	Lys	Met	Val	Gln	Gly	Ser
1				5					10					15

<210> 59

<211> 15

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<222> (1)..(1)

<223> chemically synthesized

<400> 59

Tyr	Thr	Leu	Arg	Gly	Pro	Arg	Ser	Pro	Lys	Met	Val	Gln	Gly	Ser
1				5					10					15

<210> 60

<211> 15

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<222> (1)..(1)

<223> chemically synthesized

<400> 60

Tyr	Thr	Leu	Arg	Ala	Ala	Arg	Ser	Pro	Lys	Met	Val	Gln	Gly	Ser
1				5					10					15

<210> 61

<211> 15

<212> PRT

<213> Artificial Sequence

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<222> (1)..(1)

<223> chemically synthesized

<400> 61

Tyr	Thr	Leu	Arg	Ala	Pro	Ala	Ser	Pro	Lys	Met	Val	Gln	Gly	Ser
1				5					10					15

<210> 62

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

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<222> (1)..(1)

<223> chemically synthesized

<400> 62

Tyr Thr Leu Arg Ala Pro Arg Ala Pro Lys Met Val Gln Gly Ser
 1 5 10 15

<210> 63

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<221> MOD_RES

<222> (1)..(1)

<223> chemically synthesized

<400> 63

Tyr Thr Leu Arg Ala Pro Arg Ser Ala Lys Met Val Gln Gly Ser
 1 5 10 15

<210> 64

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<221> MOD_RES

<222> (1)..(1)

<223> chemically synthesized

<400> 64

Tyr Thr Leu Arg Ala Pro Arg Ser Pro Ala Met Val Gln Gly Ser
 1 5 10 15

<210> 65

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<221> MOD_RES

<222> (1)..(1)

<223> chemically synthesized

<400> 65

Tyr	Thr	Leu	Arg	Ala	Pro	Arg	Ser	Pro	Lys	Ala	Val	Gln	Gly	Ser
1				5					10					15

<210> 66

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<221> MOD_RES

<222> (1)..(1)

<223> chemically synthesized

<400> 66

Tyr	Thr	Leu	Arg	Ala	Pro	Arg	Ser	Pro	Lys	Met	Ala	Gln	Gly	Ser
1				5					10					15

<210> 67

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<221> MOD_RES

<222> (1)..(1)

<223> chemically synthesized

<400> 67

Tyr	Thr	Leu	Arg	Ala	Pro	Arg	Ser	Pro	Lys	Met	Val	Ala	Gly	Ser
1				5					10					15

<210> 68

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<221> MOD_RES
<222> (1)..(1)
<223> chemically synthesized

<400> 68

Tyr Thr Leu Arg Ala Pro Arg Ser Pro Lys Met Val Gln Ala Ser
1 5 10 15

<210> 69

<211> 15

<212> PRT

<213> Artificial Sequence

<220>
<221> MOD_RES
<222> (1)..(1)
<223> chemically synthesized

<400> 69

Tyr Thr Leu Arg Ala Pro Arg Ser Pro Lys Met Val Gln Gly Ala
1 5 10 15

<210> 70

<211> 15

<212> PRT

<213> Artificial Sequence

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<221> MOD_RES
<222> (1)..(1)
<223> chemically synthesized

<400> 70

Pro Leu Gly Ser Pro Gly Ser Ala Ser Asp Leu Glu Thr Ser Gly
1 5 10 15

<210> 71

<211> 15

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<222> (1)..(1)

<223> chemically synthesized

<400> 71

Leu Gly Ser Pro Gly Ser Ala Ser Asp Leu Glu Thr Ser Gly Leu
1 5 10 15

<210> 72

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

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<222> (1)..(1)

<223> chemically synthesized

<400> 72

Ser Pro Gly Ser Ala Ser Asp Leu Glu Thr Ser Gly Leu Gln Glu
1 5 10 15

<210> 73

<211> 15

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<213> Artificial Sequence

<220>

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<222> (1)..(1)

<223> chemically synthesized

<400> 73

Pro Gly Ser Ala Ser Asp Leu Glu Thr Ser Gly Leu Gln Glu Gln
1 5 10 15

<210> 74

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

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<222> (1)..(1)

<223> chemically synthesized

<400> 74

Ser	Ala	Ser	Asp	Leu	Glu	Thr	Ser	Gly	Leu	Gln	Glu	Gln	Arg	Asn
1				5					10					15

<210> 75

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<222> (1)..(1)

<223> chemically synthesized

<400> 75

Ala	Ser	Asp	Leu	Glu	Thr	Ser	Gly	Leu	Gln	Glu	Gln	Arg	Asn	His
1				5					10					15

<210> 76

<211> 15

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<222> (1)..(1)

<223> chemically synthesized

<400> 76

Ser	Asp	Leu	Glu	Thr	Ser	Gly	Leu	Gln	Glu	Gln	Arg	Asn	His	Leu
1				5					10					15

<210> 77

<211> 15

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<222> (1)..(1)

<223> chemically synthesized

<400> 77

Asp	Leu	Glu	Thr	Ser	Gly	Leu	Gln	Glu	Gln	Arg	Asn	His	Leu	Gln
1				5				10					15	

<210> 78

<211> 15

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<213> Artificial Sequence

<220>

<221> MOD_RES

<222> (1)..(1)

<223> chemically synthesized

<400> 78

Leu	Glu	Thr	Ser	Gly	Leu	Gln	Glu	Gln	Arg	Asn	His	Leu	Gln	Gly
1				5				10					15	

<210> 79

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<221> MOD_RES

<222> (1)..(1)

<223> chemically synthesized

<400> 79

Leu Gln Glu Gln Arg Asn His Leu Gln Gly Lys Leu Ser Glu Leu
1 5 10 15

<210> 80

<211> 15

<212> PRT

<213> Artificial Sequence

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<221> MOD_RES

<222> (1)..(1)

<223> chemically synthesized

<400> 80

Gln Glu Gln Arg Asn His Leu Gln Gly Lys Leu Ser Glu Leu Gln
1 5 10 15

<210> 81

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<221> MOD_RES

<222> (1)..(1)

<223> chemically synthesized

<400> 81

Gln Arg Asn His Leu Gln Gly Lys Leu Ser Glu Leu Gln Val Glu
1 5 10 15

<210> 82

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<221> MOD_RES

<222> (1)..(1)

<223> chemically synthesized

<400> 82

Arg	Asn	His	Leu	Gln	Gly	Lys	Leu	Ser	Glu	Leu	Gln	Val	Glu	Gln
1				5					10					15

<210> 83

<211> 15

<212> PRT

<213> Artificial Sequence

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<221> MOD_RES

<222> (1)..(1)

<223> chemically synthesized

<400> 83

His	Leu	Gln	Gly	Lys	Leu	Ser	Glu	Leu	Gln	Val	Glu	Gln	Thr	Ser
1				5					10					15

<210> 84

<211> 15

<212> PRT

<213> Artificial Sequence

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<221> MOD_RES

<222> (1)..(1)

<223> chemically synthesized

<400> 84

Leu	Gln	Gly	Lys	Leu	Ser	Glu	Leu	Gln	Val	Glu	Gln	Thr	Ser	Leu
1				5					10					15

<210> 85

<211> 15

<212> PRT

<213> Artificial Sequence

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<221> MOD_RES
<222> (1)..(1)
<223> chemically synthesized

<400> 85

Gln Gly Lys Leu Ser Glu Leu Gln Val Glu Gln Thr Ser Leu Glu
1 5 10 15

<210> 86

<211> 15

<212> PRT

<213> Artificial Sequence

<220>
<221> MOD_RES
<222> (1)..(1)
<223> chemically synthesized

<400> 86

Gly Lys Leu Ser Glu Leu Gln Val Glu Gln Thr Ser Leu Glu Pro
1 5 10 15

<210> 87

<211> 15

<212> PRT

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<222> (1)..(1)
<223> chemically synthesized

<400> 87

Lys Leu Ser Glu Leu Gln Val Glu Gln Thr Ser Leu Glu Pro Leu
1 5 10 15

<210> 88

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<221> MOD_RES

<222> (1)..(1)

<223> chemically synthesized

<400> 88

Leu	Glu	Pro	Leu	Gln	Glu	Ser	Pro	Arg	Pro	Thr	Gly	Val	Trp	Lys
1				5					10					15

<210> 89

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<221> MOD_RES

<222> (1)..(1)

<223> chemically synthesized

<400> 89

Glu	Pro	Leu	Gln	Glu	Ser	Pro	Arg	Pro	Thr	Gly	Val	Trp	Lys	Ser
1				5					10					15

<210> 90

<211> 15

<212> PRT

<213> Artificial Sequence

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<222> (1)..(1)

<223> chemically synthesized

<400> 90

Pro	Leu	Gln	Glu	Ser	Pro	Arg	Pro	Thr	Gly	Val	Trp	Lys	Ser	Arg
1				5					10					15

<210> 91

<211> 15

<212> PRT

<213> Artificial Sequence

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<222> (1)..(1)

<223> chemically synthesized

<400> 91

Leu Gln Glu Ser Pro Arg Pro Thr Gly Val Trp Lys Ser Arg Glu
1 5 10 15

<210> 92

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<221> MOD_RES

<222> (1)..(1)

<223> chemically synthesized

<400> 92

Gln Glu Ser Pro Arg Pro Thr Gly Val Trp Lys Ser Arg Glu Val
1 5 10 15

<210> 93

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<221> MOD_RES

<222> (1)..(1)

<223> chemically synthesized

<400> 93

Glu Ser Pro Arg Pro Thr Gly Val Trp Lys Ser Arg Glu Val Ala

1 5 10 15

<210> 94

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<221> MOD_RES

<222> (1)..(1)

<223> chemically synthesized

<400> 94

Ser Pro Arg Pro Thr Gly Val Trp Lys Ser Arg Glu Val Ala Thr
1 5 10 15

<210> 95

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<221> MOD_RES

<222> (1)..(1)

<223> chemically synthesized

<400> 95

Pro Arg Pro Thr Gly Val Trp Lys Ser Arg Glu Val Ala Thr Glu
1 5 10 15

<210> 96

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<221> MOD_RES

<222> (1)..(1)

<223> chemically synthesized

<400> 96

Pro Thr Gly Val Trp Lys Ser Arg Glu Val Ala Thr Glu Gly Ile
1 5 10 15

<210> 97

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<221> MOD_RES

<222> (1)..(1)

<223> chemically synthesized

<400> 97

Thr Gly Val Trp Lys Ser Arg Glu Val Ala Thr Glu Gly Ile Arg
1 5 10 15

<210> 98

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<221> MOD_RES

<222> (1)..(1)

<223> chemically synthesized

<400> 98

Ile Arg Gly His Arg Lys Met Val Leu Tyr Thr Leu Arg Ala Pro
1 5 10 15

<210> 99

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<221> MOD_RES

<222> (1)..(1)

<223> chemically synthesized

<400> 99

Arg	Gly	His	Arg	Lys	Met	Val	Leu	Tyr	Thr	Leu	Arg	Ala	Pro	Arg
1				5					10					15

<210> 100

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<221> MOD_RES

<222> (1)..(1)

<223> chemically synthesized

<400> 100

Gly	His	Arg	Lys	Met	Val	Leu	Tyr	Thr	Leu	Arg	Ala	Pro	Arg	Ser
1				5					10					15

<210> 101

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<221> MOD_RES

<222> (1)..(1)

<223> chemically synthesized

<400> 101

Arg	Lys	Met	Val	Leu	Tyr	Thr	Leu	Arg	Ala	Pro	Arg	Ser	Pro	Lys
1				5					10					15

<210> 102

<211> 15

<212> PRT

<213> Artificial Sequence

<220>
 <221> MOD_RES
 <222> (1)..(1)
 <223> chemically synthesized

<400> 102

Lys	Met	Val	Leu	Tyr	Thr	Leu	Arg	Ala	Pro	Arg	Ser	Pro	Lys	Met
1				5					10					15

<210> 103

<211> 15

<212> PRT

<213> Artificial Sequence

<220>
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 <222> (1)..(1)
 <223> chemically synthesized

<400> 103

Val	Leu	Tyr	Thr	Leu	Arg	Ala	Pro	Arg	Ser	Pro	Lys	Met	Val	Gln
1				5					10					15

<210> 104

<211> 35

<212> PRT

<213> Artificial Sequence

<220>
 <221> MOD_RES
 <222> (1)..(1)
 <223> chemically synthesized

<400> 104

Ser	Pro	Lys	Met	Val	Gln	Gly	Ser	Gly	Cys	Phe	Gly	Arg	Lys	Met	Asp
1				5					10						15

Arg	Ile	Ser	Ser	Ser	Ser	Gly	Leu	Gly	Cys	Lys	Val	Leu	Arg	Arg	His
			20					25					30		

Lys	Lys	Lys
		35

<210> 105

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<221> misc_feature

<223> peptide

<400> 105

Ser Pro Lys Met Val Gln Gly Ser Gly Cys
1 5 10

<210> 106

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

<221> misc_feature

<223> peptide

<400> 106

Arg Lys Met Val Leu Tyr Thr Leu Arg Ala Pro Arg
1 5 10

<210> 107

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<221> misc_feature

<223> peptide

<400> 107

His Arg Lys Met Val Leu Tyr Thr Leu Arg Ala Pro Arg
1 5 10

<210> 108

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<221> misc_feature

<223> peptide

<400> 108

Tyr Thr Leu Arg Ala Pro Arg Ser Pro Lys Met Val Gln Gly Ser
1 5 10 15

<210> 109

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<221> misc_feature

<223> peptide

<400> 109

Cys Tyr Thr Leu Arg Ala Pro Arg Ser Pro Lys Met Val Gln Gly Ser
1 5 10 15

<210> 110
<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<221> misc_feature

<223> peptide

<400> 110

Cys Tyr Thr Leu Arg Ala Pro Arg Ser Pro Lys
1 5 10

<210> 111
<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<221> misc_feature

<223> peptide

<400> 111

Cys Tyr Thr Leu Arg Ala Pro Arg Ser Pro Lys Met Val
1 5 10

<210> 112
<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<221> misc_feature

<223> peptide

<400> 112

Cys Tyr Thr Leu Arg Ala Pro Arg Ser Pro Lys Met Val Gln
1 5 10

<210> 113

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<221> misc_feature

<223> peptide

<400> 113

Cys Tyr Thr Leu Arg Ala Pro Arg Ser Pro Lys Met Val Gln Gly
1 5 10 15

<210> 114

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<221> MOD_RES

<222> (1)..(1)

<223> chemically synthesized

<400> 114

Cys Thr Leu Arg Ala Pro Arg Ser Pro Lys Met Val Gln
1 5 10

<210> 115

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<221> misc_feature

<223> peptide

<400> 115

Cys Thr Leu Arg Ala Pro Arg Ser Pro Lys Met Val Gln Gly
1 5 10

<210> 116

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<221> misc_feature

<223> peptide

<400> 116

Cys Thr Leu Arg Ala Pro Arg Ser Pro Lys Met Val Gln Gly Ser
1 5 10 15

<210> 117

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<221> misc_feature

<223> peptide

<400> 117

Cys Thr Leu Arg Ala Pro Arg Ser Pro Lys Met Val Gln Gly Ser Gly
1 5 10 15

<210> 118

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<221> misc_feature

<223> peptide

<400> 118

Cys Leu Arg Ala Pro Arg Ser Pro Lys Met Val
1 5 10

<210> 119

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

<221> misc_feature

<223> peptide

<400> 119

Cys Leu Arg Ala Pro Arg Ser Pro Lys Met Val Gln
1 5 10

<210> 120

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

<221> misc_feature

<223> peptide

<400> 120

Leu Arg Ala Pro Arg Ser Pro Lys Met Val Gln Cys
1 5 10

<210> 121

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<221> misc_feature

<223> peptide

<400> 121

Cys Leu Arg Ala Pro Arg Ser Pro Lys Met Val Gln Gly Ser
1 5 10

<210> 122

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<221> misc_feature

<223> peptide



<400> 122

Cys Leu Arg Ala Pro Arg Ser Pro Lys Met Val Gln Gly Ser Gly
1 5 10 15

<210> 123

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<221> misc_feature

<223> peptide

<400> 123

Leu Gln Glu Gln Arg Asn His Leu Gln Gly Lys
1 5 10

<210> 124

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

<221> misc_feature

<223> peptide

<400> 124

Leu Glu Pro Leu Gln Glu Ser Pro Arg Pro Thr Gly
1 5 10